

What is claimed is:

1. An apparatus for generating and feeding moisture, comprising:  
a reactor having an upstream gas inlet side, a downstream moisture outlet side  
and a catalyst for generating moisture from hydrogen and oxygen; and  
5 means for reducing pressure provided on the downstream side of the reactor,  
and disposed so that moisture leaving and fed from said reactor is reduced in pressure  
by the means for reducing pressure while an internal high pressure in the reactor is  
maintained.
2. An apparatus for generating and feeding moisture according to claim 1,  
10 wherein said means for reducing pressure comprises one or more components selected  
from the group consisting of an orifice, a valve, a capillary and a filter.
3. An apparatus for generating and feeding moisture according to claim 1,  
wherein said reactor for generating moisture further comprises:  
a first reactor structural component having a material gas supply joint defining a  
material gas supply passage;  
a second reactor structural component having a moisture gas take-out joint  
defining a moisture outlet passage, wherein the said structural components are mated to  
form a reactor shell having an interior space, and wherein said second component  
defines a inside wall surface;  
a first reflector disposed in the interior space to face the material gas supply  
15 passage; and  
a second reflector disposed in the interior space to face the moisture outlet  
passage; and  
wherein said catalyst comprises a platinum coated catalyst layer provided on the  
25 inside wall surface of the second reactor structural component.
4. An apparatus for generating and feeding moisture according to claim 2,  
wherein said reactor for generating moisture further comprises:  
a first reactor structural component having a material gas supply joint defining a  
material gas supply passage;  
30 a second reactor structural component having a moisture gas take-out joint  
defining a moisture outlet passage, wherein said structural components are mated to

form a reactor shell having an interior space, and wherein said second component defines a inside wall surface;

a first reflector disposed in the interior space to face the material gas supply passage; and

5 a second reflector disposed in the interior space to face the moisture outlet passage; and

wherein said catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component.

10 5. An apparatus for generating and feeding moisture according to either claim 1, wherein said reactor for generating moisture further comprises:

a first reactor structural component having a material gas supply joint defining a material gas supply passage;

a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the said structural components are mated to form a reactor shell having an interior space, and wherein said second component defines a inside wall surface; and

a reflector disposed in the interior space; and

wherein said catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component.

6. An apparatus for generating and feeding moisture according to claim 2, wherein said reactor for generating moisture further comprises:

a first reactor structural component having a material gas supply joint defining a material gas supply passage;

25 a second reactor structural component having a moisture gas take-out joint defining a moisture outlet passage, wherein the said structural components are mated to form a reactor shell having an interior space, and wherein said second component defines a inside wall surface; and

a reflector disposed in the interior space; and

30 wherein said catalyst comprises a platinum coated catalyst layer provided on the inside wall surface of the second reactor structural component.

7. A reactor for generating moisture, having an inlet side and an outlet side, comprising:

a first reactor structural component on the inlet side of the reactor having an outside wall;

5 a second reactor structural component on the outlet side of the reactor having an outside wall, wherein the first and second components are mated for form a reactor shell having an interior space;

a material gas supply passage provided in the first reactor structural component disposed to supply material gases into the interior space;

10 a material gas supply joint connected to the material gas supply passage;

a moisture gas outlet passage provided in the second reactor structural component to lead out moisture from the interior space;

a moisture gas take-out joint connected to the moisture gas outlet passage;

fin base plates attached to the outside walls of the first and second components; and

a plurality of fins disposed on the fin base plates.

8. A reactor for generating moisture according to claim 7, further comprising: a heater disposed on the outside wall of the second component, and a heater pressing plate disposed on an outside of the heater, wherein the fin base plate is attached to an outside of the heater pressing plate.

9. A reactor for generating moisture according to claim 7 wherein said heat dissipation fins are disposed symmetrically about the material gas supply joint.

10. A reactor for generating moisture according to claim 8 wherein said heat dissipation fins are disposed symmetrically about the material gas supply joint.

25 11. A reactor for generating moisture according to claim 7 wherein said heat dissipation fins are disposed symmetrically about the moisture gas take-out joint.

12. A reactor for generating moisture according to claim 8 wherein said heat dissipation fins are disposed symmetrically about the moisture gas take-out joint.

30 13. A reactor for generating moisture according to claim 9, wherein said fins are axially symmetrical about said material gas supply joint.

14. A reactor for generating moisture according to claim 10, wherein said fins are axially symmetrical about said material gas supply joint.

15. A reactor for generating moisture according to claim 9, wherein said fins are axially symmetrical about said moisture take-out joint.

5 16. A reactor for generating moisture according to claim 10, wherein said fins are axially symmetrical about said moisture take-out joint.

17. A reactor for generating moisture according to claim 9, wherein said fins are centrally symmetrical about said moisture take-out joint.

10 18. A reactor for generating moisture according to claim 10, wherein said fins are centrally symmetrical about said moisture take-out joint.

19. A reactor for generating moisture according to claim 7, wherein said heat dissipation fins comprise surfaces treated with alumite.

20. A reactor for generating moisture according to claim 8, wherein said heat dissipation fins comprise surfaces treated with alumite.